

AD-A102 242

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND W5--ETC F/6 4/2
193048 MLRS. MISSILE NUMBER V02-002, ROUND NUMBER V-149/MD-16. --ETC(U)
JUN 81 D C KELLER

UNCLASSIFIED ERADCOM/ASL-DR-1182

NL

1 of 1
4D A
DTIC

END
DATE
FILED
8-81
DTIC

LEVEL II

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

DR 1182
June 1981
AD

12

ADA102242

METEOROLOGICAL DATA REPORT

19304B MLRS
Missile Number V02-002
Round Number V-149/MD-16
8 June 1981

by

DONALD C. KELLER
Program Support Coordinator
Phone No. (505) 679-9568
AVN No. 349-9568

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

.....
ECOM
UNITED STATES ARMY ELECTRONICS COMMAND

DTIC
ELECTED
JUL 30 1981
S F D

DTIC FILE COPY

81 7 30 022

DISPOSITION INSTRUCTIONS

Destroy this report when it is no longer needed. Do not return to the originator.

DISCLAIMER

The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

The citation of trade names and names of manufacturers in this report is not to be construed as official Government indorsement or approval of commercial products or services referenced herein.

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1182	2. GOVT ACCESSION NO. AD-A102242	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19304B MLRS. Missile No: V02-002, Round No. V-149/MD-16	5. TYPE OF REPORT & PERIOD COVERED	
6. PERFORMING ORG. REPORT NUMBER	7. AUTHOR(s) White Sands Meteorological Team	
8. CONTRACT OR GRANT NUMBER(s) DA Task 1F665702D127/02	9. PERFORMING ORGANIZATION NAME AND ADDRESS 10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd, Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002	
12. REPORT DATE June 1981	13. NUMBER OF PAGES 31	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research & Development Cmd, Adelphi, MD 20783	15. SECURITY CLASS. (of this report) UNCLASSIFIED	
16. DISTRIBUTION STATEMENT (of this Report) DISTRIBUTION STATEMENT A Approved for public release; Distribution Unlimited	17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.	
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304B MLRS, Missile No. V02-002, Round No. V-149/MD-16 presented in tabular form.		

CONTENTS

	PAGE
INTRODUCTION-----	1
DISCUSSION-----	1
MAP-----	2
TABLES:	
1. Surface Observation taken at 1133 MDT at LC-33-----	3
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, taken at 1133 MDT-----	4
3. Anemometer-Measured Wind Speed and Direction, Tower levels 1, 2, 3, and 4, taken at 1133 MDT-----	4
4. LC-33 and NICK Site T-Time Pilot-Balloon Measured Wind Data-----	5
5. Aiming and T-Time Met Messages-----	6
6. WSD Significant Level Data at 0700 MDT-----	7
7. WSD Upper Air Data at 0700 MDT-----	8
8. WSD Mandatory Levels at 0700 MDT-----	10
9. LC-37 Significant Level Data 0800 MDT-----	11
10. LC-37 Upper Air Data at 0800 MDT-----	12
11. LC-37 Mandatory Levels at 0800 MDT-----	14
12. WSD Significant Level Data at 0900 MDT-----	15
13. WSD Upper Air Data at 0900 MDT-----	16
14. WSD Mandatory Levels at 0900 MDT-----	20
15. LC-37 Significant Level Data at 1000 MDT-----	21
16. LC-37 Upper Air Data at 1000 MDT-----	22
17. LC-37 Mandatory Levels at 1000 MDT-----	23
18. WSD Significant Level Data at 1133 MDT-----	24
19. WSD Upper Air Data at 1133 MDT-----	25
20. WSD Mandatory Levels at 1133 MDT-----	27

INTRODUCTION

19304B MLRS, Missile Number V02-002, Round Number V-149/MD-16, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1133 MDT, 8 June 1981. The scheduled launch time was 1000 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations:

a. Surface

(1) Standard surface observations to include pressure, temperature (°C), relative humidity, dew point (°C), density (gm/m³), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air:

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

SITE AND ALTITUDE

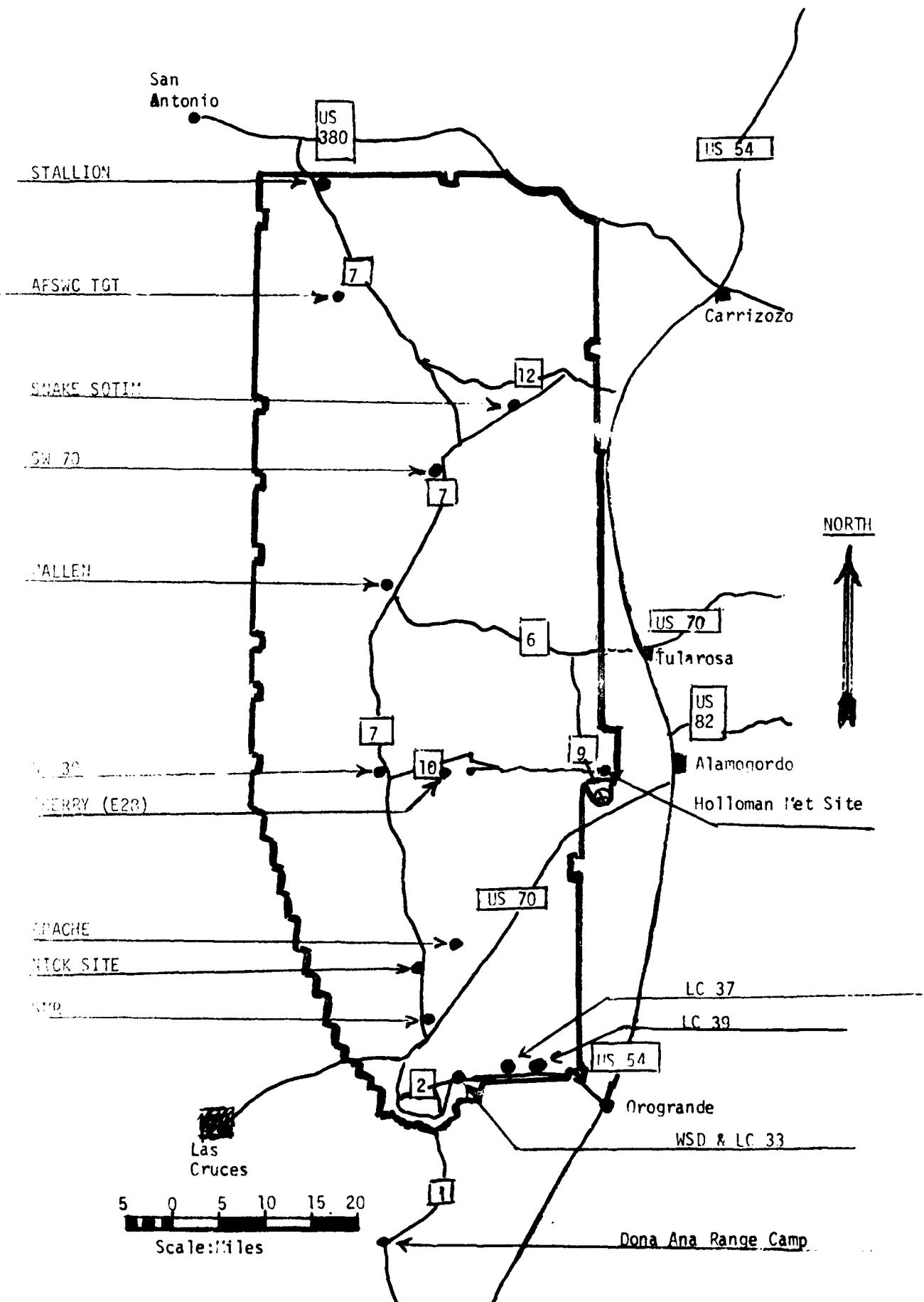
LC-33 1350 Meters
NICK 2000 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME

WSD 0700 MDT
LC-37 0800 MDT
WSD 0900 MDT
LC-37 1000 MDT
WSD 1133 MDT

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A	



SECRET SURFACE OBSERVATION

TABLE I
STATION LC-33

DATE	TIME	PRESSURE Hg	TEMPERATURE OF °C	DEA POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm./cu. ft.	DIRECTION AND SPEED of winds in kts	CHARACTER kts	VISIBIL- ITY
1133	878.1		36.0		4.5	14	982	020	7

Jahreskalender

TIME:	MDT	1133	
DRY BULB TEMP.		36.0	
WET BULB TEMP.		16.9	
WET BULB DEPR.		19.1	
DEW POINT		4.5	
RELATIVE HUMID.		14	

TABLE 2

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

1133 MDT

8 June 1981

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	T-TIME SEC	DIP DEG	SPEED KTS	
T-30	038	02	T-30	049	03	T-30	062	07
T-20	050	04	T-20	037	04	T-20	063	04
T-10	046	03	T-10	050	06	T-10	087	03
T.0	066	05	T.0.0	061	06	T.0.0	092	04
T+10	048	06	T+10	068	05	T+10	083	03

TABLE 3

** LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET			LEVEL #2, 52 FEET		
T-TIME SEC	DIP DEG	SPEED KTS	T-TIME SEC	DIP DEG	SPEED KTS
T-30			T-30		
T-20			T-20		
T-10			T-10		
T.0.0			T.0.0		
T+10			T+10		

LEVEL #3, 102 FEET			LEVEL #4, 202 FEET		
T-TIME SEC	DIP DEG	SPEED KTS	T-TIME SEC	DIP DEG	SPEED KTS
T-30			T-30		
T-20			T-20		
T-10			T-10		
T.0.0			T.0.0		
T+10			T+10		

over Data, equipment malfunction.

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 8 June 1981

SITE: LC-33
 TIME: 1133 MDT
 WSTM COORDINATES:
 X= 485,135.76
 Y= 185,919.24
 H= 3988.57

SITE: NICK
 TIME: 1133 MDT
 WSTM COORDINATES:
 X= 470,734.56
 Y= 255,775.64
 H= 4126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS	LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
surface	020	07	surface	353	04
150	034	09	150	015	07
210	027	08	210	019	08
270	010	05	270	024	08
330	017	04	330	028	08
390	038	04	390	027	08
510	067	04	510	018	09
650	049	07	650	359	09
800	027	07	800	340	09
950	012	08	950	329	11
1100	009	11	1100	328	09
1300	020	12	1300	295	08
1550	MISG	MISG	1550	288	11
1750	MISG	MISG	1750	293	13
2000	MISG	MISG	2000	287	23

Data obtained from T-9 radar tracked
 Pilot-Balloon observation.

Data obtained from single-Theodolite
 Pilot-Balloon observation.

TABLE 5AIMING AND T-TIME COMPUTER MET MESSAGES
8 June 1981

WSD 0700 MDT
 METCM1324064
 081300122877
 00640004 29420877
 01030008 30040867
 02010012 30200843
 03015015 29940805
 04623012 29570760
 05582013 29150718
 06556015 28710677
 07531016 28230637
 08484012 27760600

LC-37 0800 MDT
 METCM1324063
 081400124875
 00347002 29860875
 01542014 30010865
 02006014 30190841
 03047015 30000804
 04599013 29630759
 05567015 29210716
 06546014 28780676
 07523013 28310636
 08490012 27840599

WSD 0900 MDT
 METCM1324064
 081500122878
 00012002 30250878
 01040007 30250868
 02013014 30230844
 03003012 29960806
 04579013 29590761
 05559013 29170718
 06525016 28740677
 07495017 28270637
 08445012 27810600

LC-37 1000 MDT
 METCM1324063
 081600124876
 00027005 30710876
 01025011 30590866
 02005014 30350842
 03609010 30020805
 04555014 29620760
 05531015 29220718
 06510018 28780677
 07484016 28300637

WSD 1133 MDT
 METCM1324064
 081750122878
 00034007 31030878
 01061011 30780868
 02634007 30500845
 03584005 30100807
 04553013 29630763
 05512019 29190720
 06479019 28760678
 07429015 28310639
 08367010 27860602

STATION ALTITUDE 3939.00 FEET NS.
8 JUNE 81 0700 HRS E. DT
ASCENSION NO. 376

SIGNIFICANT LEVEL DATA
1590020371,
WHITE SANDS
TABLE 6

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
876.8	3989.0	19.9	5.2	38.0
865.4	4364.9	28.5	7.7	27.0
850.0	4887.9	29.5	1.9	18.0
785.8	7157.3	24.2	-9	19.0
700.0	10427.4	15.8	-4.2	25.0
609.0	14211.4	5.2	-2.3	37.0
566.4	16165.5	-4	-6.8	53.0
549.6	16956.7	-1.0	-20.5	21.0
500.0	19417.4	-5.4	-27.9	15.0
468.6	21110.6	-9.7	-26.7	28.0
400.0	25033.7	-18.2	-37.0	16.0
300.0	31865.9	-35.5	-51.2	18.0

TABLE 7

STATION ALTITUDE 3989.00 FEET MSL
5 A JUNE 81 0700 HRS :0 T
ASCLINATION NO. 376

UPPLR AIR DATA
159.020376
WHITE SANDS

TABLE 7 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEMPPOINT PERCENT	REL.HUM. PERCENT	DENSITY GM/CURIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
23500.0	425.3	-14.9	-32.4	20.7	573.5	626.2	319.2	3.2	1.000130
24000.0	416.9	-16.0	-34.1	19.2	564.5	624.9	329.6	3.2	1.000128
24500.0	408.6	-17.0	-35.8	17.6	555.7	623.5	346.7	3.4	1.000125
25000.0	400.5	-18.1	-37.6	16.1	547.0	622.2	1.5	4.1	1.000123
25500.0	392.2	-19.4	-38.6	16.1	538.3	620.7	11.3	5.3	1.000121
26000.0	384.1	-20.6	-39.6	16.3	529.8	619.1	10.5	5.3	1.000119
26500.0	376.1	-21.9	-40.6	16.4	521.3	617.6	21.3	4.5	1.000117
27000.0	368.2	-23.2	-41.6	16.6	513.1	616.0	29.5	3.9	1.000115
27500.0	360.5	-24.4	-42.5	16.7	504.9	614.4	40.5	3.5	1.000113
28000.0	353.0	-25.7	-43.5	16.9	497.0	612.9	43.4	3.4	1.000111
28500.0	345.7	-27.0	-44.5	17.0	489.1	611.3	41.9	3.3	1.000110
29000.0	338.5	-28.2	-45.5	17.2	481.4	609.7	51.8	3.1	1.000108
29500.0	331.4	-29.5	-46.5	17.3	473.8	608.1	69.3	3.2	1.000106
30000.0	324.5	-30.8	-47.5	17.5	466.4	606.5	78.0	2.9	1.000104
30500.0	317.8	-32.0	-48.5	17.6	459.1	605.0	70.9	1.5	1.000103
31000.0	311.1	-33.3	-49.5	17.7	451.9	603.4	1.000101		
31500.0	304.7	-34.6	-50.5	17.9	444.8	601.8	1.000099		

STATION ALTITUDE 3989.00 FEET MSL
8 JUN 81 0700 HRS WD T
ASCENSION NO. 376

MANDATORY LEVELS
1590020376
WHITE SANDS

GLONETIC COORDINATES
32°40.043 LAT DEG
106.37033 LON DEG

TABLE 8

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	AIR DEGREES CENTIGRADE	TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA DEGREES (TN)	WIND DATA SPFELD KNOTS
850.0	4684.	28.5	1.9	18.	9999.0	9999.0XX
800.0	6637.	25.2	-2	19.	9999.0	9999.0XX
750.0	8480.	20.8	-2.0	21.	346.0	12.5
700.0	10417.	15.8	-4.2	25.	319.7	13.4
650.0	12459.	10.1	-6.0	51.	300.9	15.8
600.0	14619.	4.0	-8.2	40.	277.6	12.0
550.0	16915.	-1.0	-20.1	22.	218.7	5.7
500.0	19390.	-5.4	-27.9	15.	199.2	4.7
450.0	22068.	-11.8	-27.8	25.	337.1	3.8
400.0	24991.	-18.2	-37.8	16.	2.0	4.2
350.0	28212.	-26.2	-43.9	17.	42.7	3.3
300.0	31801.	-35.5	-51.2	18.		

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 4051.37 FEET MSL
A JULY 81
ASCENSION NO. 115

SIGNIFICANT LEVEL DATA

1530160115
LC-37

STATION COORDINATES
52.40175 LAT LEG
106.31232 LONG LEG

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FELT	TEMPERATURE AIR DRYPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
875.2	4051.4	23.9	37.0
850.0	4095.7	28.1	23.0
801.5	6598.7	26.0	22.0
749.6	8517.2	21.4	25.0
700.0	10448.3	16.8	27.0
596.0	14853.6	4.5	43.0
553.8	16901.6	-1.1	59.0
524.1	18245.0	-3.0	62.0
500.0	19674.2	-5.0	65.0
483.9	20309.0	-5.6	68.0
449.4	22198.0	-10.6	76.9
400.0	25103.4	-17.0	86.0
300.0	31974.0	-34.3	98.0

STATION ALTITUDE 4051.37 FEET M.D.T.
A JUNE 81 0800 hrs MDT
ASCENSION NO. 115

14 PER AIR DATA
15301600115
LC-37

DETAILED COORDINATES
32°40'17.5 LAT UEG
106°31'32.32 LON UEG

TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR OF WIND DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPLIT OF SOUND KNOTS	DIRECT FLIGHT DEGREES (T)	INDEX OF REFRACTION
4051.4	375.2	23.9	4.3	37.0	1021.5	673.0	1.9
4200.0	361.7	26.1	7.0	29.6	993.6	675.4	2.4
5000.0	840.9	28.0	4.9	22.9	979.0	677.3	2.2
5500.0	832.5	27.4	4.2	22.6	961.4	676.0	9.7
6000.0	816.2	26.7	3.5	22.4	947.0	675.9	12.1
6500.0	804.2	26.1	2.8	22.1	932.9	675.1	10.1
7000.0	790.4	25.0	2.3	22.6	920.2	675.9	12.2
7500.0	776.7	23.8	1.7	23.4	908.0	672.5	10.5
8000.0	763.3	22.6	1.2	24.2	896.0	671.1	11.5
8500.0	750.9	21.4	.6	25.0	884.1	669.7	11.5
9000.0	736.9	20.2	-.1	25.5	872.2	668.3	13.6
9500.0	723.9	19.1	-.9	26.0	860.5	666.9	13.8
10000.0	711.2	17.9	-1.6	26.5	849.9	665.6	13.9
10500.0	696.7	16.7	-2.3	27.2	837.5	664.1	14.2
11000.0	686.0	15.3	-2.6	29.0	825.4	662.5	14.2
11500.0	672.6	13.9	-3.0	30.8	815.4	661.9	14.6
12000.0	661.4	12.5	-3.5	32.6	804.6	659.3	14.6
12500.0	649.5	11.1	-4.0	34.5	794.0	657.7	14.0
13000.0	637.7	9.7	-4.6	36.3	783.5	656.0	14.0
13500.0	626.2	8.3	-5.2	38.1	773.2	654.4	14.0
14000.0	614.9	6.9	-5.8	39.9	763.0	652.7	14.0
14500.0	603.7	5.5	-6.5	41.7	753.0	651.1	13.1
15000.0	592.7	4.1	-7.0	44.2	743.1	649.4	12.5
15500.0	581.7	2.6	-7.2	48.3	733.0	647.7	12.4
16000.0	570.8	1.2	-7.4	52.4	723.1	646.0	12.7
16500.0	560.1	-.2	-7.8	56.5	713.3	644.3	13.4
17000.0	549.6	-1.4	-9.5	53.9	703.0	642.9	13.0
17500.0	539.2	-2.0	-13.5	41.1	691.8	642.0	12.9
18000.0	529.0	-2.7	-18.5	28.2	680.7	641.0	12.5
18500.0	518.9	-3.4	-22.8	20.5	669.7	640.0	11.4
19000.0	509.0	-4.2	-25.2	17.7	659.0	639.0	11.4
19500.0	499.3	-5.0	-27.6	15.0	648.0	638.5	11.4
20000.0	489.7	-5.4	-27.9	15.0	637.6	637.6	11.4
20500.0	480.3	-6.1	-27.8	16.0	626.3	636.9	11.4
21000.0	471.0	-7.5	-27.3	16.7	617.3	635.1	11.4
21500.0	461.9	-8.9	-27.0	21.3	606.5	633.5	11.4
22000.0	452.0	-10.3	-26.9	24.0	595.8	631.6	11.4
22500.0	444.0	-11.4	-27.9	24.1	590.7	630.4	11.4
23000.0	435.2	-12.5	-29.5	22.5	581.4	629.1	11.4
23500.0	426.6	-13.6	-31.2	21.0	572.3	627.8	11.4

STATION ALTITUDE 4051.37 FEET MSL
P. 0.014E 01 0800 hrs MDT
ASCENSION 140. 215

UPPLR AIR DATA
1500160115
LC-37

TABLE 10 CON'T

GEOMETRIC ALTITUDE FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES C	TEMPERATURE POINT DEGREES C	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (14)	WIND DATA KNOTS	INPUT OF REFRACTION
24000.0	410.1	-14.6	-32.8	19.4	563.3	626.5	283.7	.3	1.000128
24500.0	409.9	-15.7	-34.6	17.9	554.4	625.2	29.7	1.0	1.000125
25000.0	401.7	-16.8	-36.4	16.3	545.7	625.9	34.0	2.8	1.000123
25500.0	399.5	-16.0	-37.5	16.1	537.1	622.4	36.8	3.8	1.000121
26000.0	389.3	-19.2	-38.5	16.3	529.0	620.8	40.3	3.8	1.000119
26500.0	377.3	-20.5	-39.4	16.4	520.2	619.3	49.4	3.2	1.000117
27000.0	369.5	-21.8	-40.4	16.6	512.0	617.7	87.0	2.1	1.000115
27500.0	361.9	-23.0	-41.4	16.7	503.9	616.2	150.7	2.3	1.000113
28000.0	354.4	-24.3	-42.3	16.8	496.0	614.6	153.5	3.0	1.000111
28500.0	347.0	-25.5	-43.3	17.0	488.2	613.1	169.7	2.7	1.000110
29000.0	339.8	-26.8	-44.3	17.1	480.5	611.5	196.0	2.1	1.000108
29500.0	332.4	-28.1	-45.3	17.3	472.9	609.9	203.3	1.7	1.000106
30000.0	325.9	-29.3	-46.3	17.4	465.5	608.4	190.7	.9	1.000104
30500.0	319.1	-30.6	-47.3	17.6	458.3	606.8	93.3	1.7	1.000103
31000.0	312.5	-31.8	-48.2	17.7	451.1	605.2	1.0	1.000101	
31500.0	306.0	-33.1	-49.2	17.9	444.1	603.6			1.000099

OUTLINE COORDINATES
32.40175 LAT LEG
106.31232 LONG LEG

STATION ALTITUDE "051.3 / EFT T:15L
A JUNE 11 0800 HRS, 'D'
ASCENSION NO. 115

PLANIMETRIC LEVELS
1590180115
LC-37

GEODETIC COORDINATES
32.40175 LAT LEG
106.31232 LON LEG

TABLE 11

PRESSURE MILLIBARS	GROSS FLET	TEMPERATURE		REL. HUM. PERCENT	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS
		AIR DEGREES	DEWPONT CENTIGRADE			
850.0	4872.	28.1	5.0	23.	90	0.2
800.0	6047.	25.9	2.0	22.	130	12.5
750.0	8474.	21.4	-6	25.	344.6	13.6
700.0	10438.	16.8	-2.3	27.	308.7	14.8
650.0	12488.	11.1	-4.0	34.	305.8	12.5
600.0	14657.	5.0	-6.7	42.	271.4	13.0
550.0	16960.	-1.3	-9.3	54.	242.2	7.5
500.0	19436.	-5.0	-27.6	15.	205.9	4.5
450.0	22130.	-10.7	-26.9	25.	223.1	2.3
400.0	25066.	-17.0	-36.8	16.	35.0	5.1
350.0	28302.	-25.0	-42.9	17.	163.6	2.9
300.0	31909.	-34.3	-50.2	18.		

ION ALTITUDE 3983.00 FEET MSL
 8 JUNE 81 0900 HRS MDT
 ASCENSION NO. 377

SIGNIFICANT LEVEL DATA
 1590020377
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE DEGREES	AIR DEPOINT CENTIGRADE	REL.HUM. PERCENT
878.3	3989.0	28.0	8.3	29.0
866.3	4389.3	28.2	4.5	22.0
850.0	4942.3	28.8	2.1	18.0
765.2	7970.6	22.2	-2.5	19.0
700.0	10480.1	15.8	-6.5	21.0
588.2	15221.0	2.8	-9.1	41.0
562.4	16408.0	-1.6	-8.5	55.0
554.0	16803.3	-1.1	-12.3	42.0
528.8	18020.0	-3.1	-21.8	22.0
508.3	19044.9	-5.3	-27.1	16.0
500.0	19470.1	-5.0	-27.6	15.0
496.2	19667.3	-5.0	-27.6	15.0
400.0	25102.4	-18.0	-38.2	15.0
307.0	31413.5	-33.6	-50.1	17.0
300.0	31944.8	-35.0		
258.0	35354.8	-42.5		
250.0	36053.4	-44.0		
214.6	39381.0	-50.6		
200.0	40886.6	-52.9		
171.0	44171.4	-59.0		
166.4	44735.4	-58.9		
158.0	45801.3	-61.2		
150.0	46862.9	-62.0		
115.2	52150.3	-69.6		
103.5	54248.8	-71.2		
100.0	54721.4	-70.5		
89.2	57165.2	-69.6		
63.4	58483.1	-71.2		
70.0	61935.9	-67.4		
50.0	68786.9	-58.0		
40.0	73492.8	-52.6		
32.8	77745.0	-51.2		

ON ALTITUDE 3989.10 FEET S.
JUNE 81 0900 HRS ADT
ASCENSION NO. 377

UPPER AIR DATA
1590020377
WHITE SANDS
TABLE 13

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	878.3	28.0	8.3	29.0	1011.2	677.7	10.0	1.9	1.000271
4000.0	878.0	28.0	8.2	28.8	1010.8	677.7	9.9	2.0	1.000271
4500.0	863.0	28.3	4.1	21.2	993.7	677.6	8.3	5.8	1.000256
5000.0	848.3	28.7	2.1	18.0	976.0	677.9	7.9	9.6	1.000247
5500.0	833.7	27.6	1.3	18.2	962.8	676.6	7.8	13.4	1.000243
6000.0	819.4	26.5	.5	18.3	949.8	675.4	4.3	12.9	1.000238
6500.0	805.3	25.4	-.2	18.5	937.0	674.1	358.5	11.1	1.000234
7000.0	791.4	24.3	-1.0	18.7	924.3	672.8	345.4	10.3	1.000230
7500.0	777.8	23.2	-1.8	18.8	911.9	671.6	333.6	10.5	1.000226
8000.0	764.4	22.1	-2.5	19.0	899.6	670.3	329.7	12.4	1.000222
8500.0	751.0	20.8	-3.3	19.4	887.7	668.8	326.0	13.7	1.000219
9000.0	737.8	19.6	-4.1	19.8	876.0	667.3	321.8	14.2	1.000215
9500.0	724.8	18.3	-4.9	20.2	864.4	665.8	316.4	14.3	1.000212
10000.0	712.0	17.0	-5.7	20.6	853.0	664.3	307.6	13.8	1.000208
10500.0	699.5	15.7	-6.4	21.1	841.8	662.8	300.2	13.9	1.000205
11000.0	686.8	14.4	-6.4	23.2	830.4	661.3	296.8	14.7	1.000202
11500.0	674.3	13.0	-6.4	25.3	819.1	659.7	293.2	15.4	1.000200
12000.0	662.0	11.6	-6.5	27.4	808.1	658.1	289.3	16.1	1.000198
12500.0	650.0	10.3	-6.7	29.5	797.2	656.6	284.6	16.2	1.000195
13000.0	638.2	8.9	-7.0	31.6	786.5	655.0	277.8	15.5	1.000192
13500.0	626.6	7.5	-7.4	33.7	776.0	653.4	270.6	14.6	1.000190
14000.0	615.2	6.1	-7.8	35.8	765.7	651.7	262.7	13.3	1.000187
14500.0	604.0	4.8	-8.3	38.0	755.5	650.1	255.5	12.2	1.000184
15000.0	593.0	3.4	-8.9	40.1	745.5	648.5	251.1	10.7	1.000182
15500.0	582.0	2.0	-8.9	44.3	735.4	646.9	245.1	9.7	1.000179
16000.0	571.1	.6	-8.6	50.2	725.4	645.2	235.2	7.1	1.000178
16500.0	560.4	-.7	-9.3	52.0	715.2	643.7	213.4	6.4	1.000175
17000.0	549.8	-1.4	-13.6	38.8	703.9	642.7	189.0	7.8	1.000168
17500.0	539.4	-2.1	-17.2	30.5	692.9	641.6	181.6	9.7	1.000163
18000.0	529.2	-3.1	-21.6	22.3	682.1	640.5	180.0	11.4	1.000158
18500.0	519.1	-4.1	-24.2	19.2	671.8	639.2	185.2	10.0	1.000154
19000.0	509.2	-5.2	-26.9	16.3	661.7	637.9	196.0	7.8	1.000151
19500.0	499.4	-5.0	-27.6	15.0	648.5	638.1	216.3	5.1	1.000148
20000.0	489.7	-5.8	-28.2	15.0	637.8	637.1	261.3	3.9	1.000145
20500.0	480.1	-7.0	-29.2	15.0	628.1	635.7	273.8	3.4	1.000143
21000.0	470.7	-8.2	-30.2	15.0	618.6	634.3	280.0	2.7	1.000140
21500.0	461.4	-9.4	-31.1	15.0	609.2	632.8	267.8	2.3	1.000138
22000.0	452.4	-10.6	-32.1	15.0	600.0	631.4	244.6	2.2	1.000136
22500.0	443.5	-11.8	-33.1	15.0	590.9	629.9	240.0	2.9	1.000134
23000.0	434.8	-13.0	-34.1	15.0	582.0	628.5	242.2	3.6	1.000132

STATION ALTITUDE 3989.00 FEET MSL
8 JUNE 81 0900 HRS ND T
ASCENSION NO. 377

UPPER AIR DATA
1590020377
WHITE SANDS
TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	SPEED OF WIND, CUBIC METER	WIND DATA		INDEX OF REFRACTION
					GM/CUBIC SOUND KNOTS	DIRECTION DEGREES (TN)	
23500.0	426.2	-14.2	-35.1	15.0	573.2	627.0	239.9
24000.0	417.9	-15.4	-36.0	15.0	564.6	625.6	236.6
24500.0	409.7	-16.6	-37.0	15.0	556.1	624.1	215.8
25000.0	401.6	-17.8	-38.0	15.0	547.7	622.7	186.0
25500.0	393.4	-19.0	-38.9	15.1	539.1	621.2	172.7
26000.0	385.2	-20.2	-39.9	15.3	530.5	619.6	168.4
26500.0	377.2	-21.5	-40.8	15.4	522.0	618.1	168.6
27000.0	369.4	-22.7	-41.7	15.6	513.7	616.6	172.9
27500.0	361.7	-23.9	-42.7	15.8	505.6	615.1	169.2
28000.0	354.2	-25.2	-43.6	15.9	497.6	613.5	145.7
28500.0	346.9	-26.4	-44.5	16.1	489.7	612.0	111.9
29000.0	339.7	-27.6	-45.5	16.2	481.9	610.5	95.8
29500.0	332.6	-28.9	-46.4	16.4	474.3	608.9	86.5
30000.0	325.7	-30.1	-47.4	16.6	466.9	607.4	79.1
30500.0	319.0	-31.3	-48.3	16.7	459.5	605.8	61.8
31000.0	312.4	-32.6	-49.3	16.9	452.3	604.3	37.1
31500.0	305.8	-33.8	-51.8	14.2.*	445.2	602.7	22.1
32000.0	299.3	-35.1			438.0	601.0	13.1
32500.0	292.7	-36.2			430.4	599.7	8.2
33000.0	286.3	-37.3			423.0	598.3	10.0
33500.0	280.1	-38.4			415.6	596.9	12.3
34000.0	273.9	-39.5			408.5	595.5	17.4
34500.0	267.9	-40.6			401.4	594.1	22.0
35000.0	262.1	-41.7			394.5	592.7	24.9
35500.0	256.3	-42.8			387.7	591.3	27.5
36000.0	250.6	-43.9			380.8	589.9	30.3
36500.0	244.9	-44.9			373.8	588.6	33.4
37000.0	239.4	-45.9			366.9	587.3	34.7
37500.0	233.9	-46.9			360.2	586.0	32.5
38000.0	228.6	-47.9			353.5	584.7	25.6
38500.0	223.5	-48.9			347.1	583.5	33.7
39000.0	213.4	-49.8			340.7	582.2	285.3
39500.0	213.4	-50.8			334.3	580.9	266.4
40000.0	208.5	-51.5			327.7	579.9	260.2
40500.0	203.7	-52.3			321.2	578.9	264.8
41000.0	198.9	-53.1			314.9	577.9	269.7
41500.0	194.2	-54.0			308.6	576.7	273.2
42000.0	189.7	-55.0			302.8	575.4	275.9
42500.0	185.2	-55.9			296.9	574.2	276.7
43000.0	180.8	-56.8			291.2	573.0	276.1

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

MISSION ALTITUDE 3985, 30 FEET MSL
3 JUNE 81 0900 HRS MDT
ASCENSION NO. 377

UPPER AIR DATA

1590020377
WHITE SANDS

GEOGRAPHIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	176.6	-57.8	285.6	571.8	273.5	23.6	1.000064	
44000.0	172.4	-58.7	280.0	570.5	268.0	25.5	1.000062	
44500.0	168.3	-58.9	273.7	570.2	263.6	27.6	1.000061	
45000.0	164.3	-59.5	267.8	569.5	260.8	29.4	1.000060	
45500.0	160.3	-60.5	262.7	568.0	258.3	31.2	1.000059	
46000.0	156.5	-61.3	257.4	567.0	260.2	30.9	1.000057	
46500.0	152.7	-61.7	251.6	566.5	262.5	30.4	1.000056	
47000.0	149.0	-62.2	246.0	565.8	263.3	30.7	1.000055	
47500.0	145.3	-62.9	240.8	564.9	263.6	31.2	1.000054	
48000.0	141.7	-63.6	235.6	563.9	263.8	31.7	1.000052	
48500.0	138.2	-64.4	230.6	562.9	263.7	32.0	1.000051	
49000.0	134.8	-65.1	225.7	562.0	263.8	32.0	1.000050	
49500.0	131.5	-65.8	220.9	561.0	264.1	30.6	1.000049	
50000.0	128.3	-66.5	216.2	560.0	264.4	29.2	1.000048	
50500.0	125.1	-67.2	211.6	559.0	262.3	28.9	1.000047	
51000.0	122.0	-67.9	207.1	558.1	259.8	28.9	1.000046	
51500.0	119.0	-68.7	202.7	557.1	258.4	28.5	1.000045	
52000.0	116.1	-69.4	198.4	556.1	258.6	27.4	1.000044	
52500.0	113.2	-69.9	193.9	555.5	259.0	26.4	1.000043	
53000.0	110.3	-70.2	189.4	554.9	263.7	25.4	1.000042	
53500.0	107.5	-70.6	185.0	554.4	268.8	24.7	1.000041	
54000.0	104.8	-71.0	180.6	553.9	273.9	24.1	1.000040	
54500.0	102.2	-70.9	176.0	554.0	279.1	23.7	1.000039	
55000.0	99.6	-70.5	171.2	554.6	284.8	21.3	1.000038	
55500.0	97.1	-70.3	166.7	554.9	293.3	17.1	1.000037	
56000.0	94.7	-70.1	162.4	555.2	304.7	13.8	1.000036	
56500.0	92.3	-69.9	158.1	555.5	306.7	13.0	1.000035	
57000.0	90.0	-69.7	154.0	555.7	309.0	12.2	1.000034	
57500.0	87.7	-70.1	150.4	555.3	314.4	12.6	1.000033	
58000.0	85.5	-70.6	147.0	554.4	320.2	13.6	1.000033	
58500.0	83.3	-71.2	143.7	553.7	327.0	14.0	1.000032	
59000.0	81.2	-70.6	139.7	554.4	339.4	13.2	1.000031	
59500.0	79.2	-70.1	135.9	555.2	352.8	13.0	1.000030	
60000.0	77.2	-69.5	132.1	555.9	358.7	11.4	1.000029	
60500.0	75.3	-69.0	128.5	556.7	5.5	9.7	1.000029	
61000.0	73.4	-68.4	124.9	557.4	18.7	8.1	1.000028	
61500.0	71.6	-67.9	121.5	558.2	40.2	7.4	1.000027	
62000.0	69.8	-67.3	118.1	558.9	64.6	7.5	1.000026	
62500.0	68.1	-66.6	114.8	559.9	99.5	8.0	1.000026	
63000.0	66.4	-65.9	111.7	560.8	122.8	10.8	1.000025	

STATION ALTITUDE 3989.00 FEET MSL
 8 JUNE 81 0900 HRS MDT
 ASCENSION NO. 377

UPPER AIR DATA
 1590020377
 WHITE SANDS

GEODETIC COORDINATES
 32°40'04.3" LAT DEG
 106°37'03.3" LON DEG

TABLE 13 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEPOINT DEGREES	REL.HUM. PERCENT	SPEED OF SOUND METER KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	64.8	-65.3			108.6	561.7	136.8	1.000024
64000.0	63.3	-64.6			105.6	562.6	147.1	1.000024
64500.0	61.7	-63.9			102.7	563.6	151.9	1.000023
65000.0	60.2	-63.2			99.9	564.5	148.5	1.000022
65500.0	58.8	-62.5			97.2	565.4	144.3	1.000022
66000.0	57.3	-61.8			94.5	566.3	136.7	1.000021
66500.0	55.9	-61.1			91.9	567.3	127.3	1.000020
67000.0	54.6	-60.5			89.4	568.2	117.3	1.000020
67500.0	53.3	-59.8			87.0	569.1	107.7	1.000019
68000.0	52.0	-59.1			84.6	570.0	98.0	1.000019
68500.0	50.7	-58.4			82.3	570.9	96.2	1.000018
69000.0	49.5	-57.8			80.1	571.8	97.3	1.000018
69500.0	48.3	-57.2			78.0	572.5	99.0	1.000017
70000.0	47.2	-56.6			75.9	573.3	105.0	1.000017
70500.0	46.1	-56.0			74.0	574.0	109.9	1.000016
71000.0	45.0	-55.5			72.0	574.8	111.2	1.000016
71500.0	44.0	-54.9			70.2	575.6	108.1	1.000016
72000.0	42.9	-54.3			68.3	576.3	104.6	1.000016
72500.0	41.9	-53.7			66.6	577.1	96.9	1.000015
73000.0	40.9	-53.2			64.8	577.8	92.8	1.000014
73500.0	40.0	-52.6			63.2	578.6	90.7	1.000014
74000.0	39.1	-52.4			61.7	578.8	89.2	1.000014
74500.0	38.2	-52.3			60.2	579.0	87.1	1.000013
75000.0	37.3	-52.1			59.8	579.2	85.9	1.000013
75500.0	36.4	-51.9			57.4	579.4	85.8	1.000013
76000.0	35.6	-51.8			56.0	579.6	268.3	1.1
76500.0	34.8	-51.6			54.7	579.9	53.4	1.000012
77000.0	34.0	-51.4			52.1	580.1	580.3	1.000012
77500.0	33.2	-51.3						1.000012

STATION ALTITUDE 3989.00 FEET MSL
8 JUNE 81 0900 HRS ND T
ASCENSION NO. 377

MANDATORY LEVELS
1590020377
WHITE SANDS

TABLE 14

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES	AIR DEWPOINT DEGREES	CENTIGRADE	REL.HUM. PERCENT	WIND DATA	
						DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4939.	28.8	2.1	18.	7.9	9.2	
800.0	6692.	25.0	-5.	19.	353.7	10.7	
750.0	8533.	20.8	-3.4	19.	325.7	13.7	
700.0	10470.	15.8	-6.5	21.	300.4	13.9	
650.0	12512.	10.3	-6.7	30.	284.3	16.2	
600.0	14673.	4.3	-8.5	39.	254.0	11.6	
560.0	16971.	-1.4	-13.6	39.	189.6	7.7	
500.0	19442.	-5.0	-27.6	15.	213.9	5.3	
450.0	22131.	-10.9	-32.4	15.	237.6	2.2	
400.0	25060.	-18.0	-38.2	15.	181.3	3.8	
350.0	28284.	-25.9	-44.1	16.	121.1	1.5	
300.0	31880.	-35.0			14.2	4.7	
250.0	35973.	-44.0			30.5	4.9	
200.0	40786.	-52.9			268.5	13.8	
175.0	43579.	-58.1			271.5	24.2	
150.0	46735.	-62.0			263.2	30.5	
125.0	50388.	-67.2			262.2	28.9	
100.0	54750.	-70.5			283.5	2.3	
80.0	59100.	-70.3			346.5	5.0	
70.0	61722.	-67.4			58.6	7.6	
60.0	64802.	-63.1			148.3	16.0	
50.0	68527.	-58.0			96.8	12.4	
40.0	73198.	-52.6			90.8	34.3	

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.37 FEET MSL.
A. JUNE 81 1000 HRS (DT)
SECTION NO. 116

SIGNIFICANT LEVEL DATA
15916011,
LC-37

GEODETIC COORDINATES
32°40'17" LAT UEG
106°31'23" LON DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
876.1	4051.4	32.9	18.0
850.0	4940.4	29.9	16.0
700.0	10495.2	17.0	19.0
618.8	13085.8	7.0	29.0
592.4	15057.1	3.7	39.0

STATION ALTITUDE 4051.37 FEET
A. JUNE 31 1030 HRS WDT
ASCENSION NO. 116

THINER AIR DATA
153018610
L.C-37

GEODETIC COORDINATES
52.40175 LAT UEG
106.31232 LONG DEG

TABLE 16

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CURIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION	
4051.4	870.1	32.9	5.5	18.0	993.4	632.9	13.0	5.1	
4500.0	862.8	31.4	3.4	17.0	983.6	631.0	0.5	6.4	
5000.0	846.2	29.8	1.3	16.0	972.6	679.1	.5	7.9	
5500.0	833.5	28.6	*6	16.3	959.5	677.7	350.5	9.6	
6000.0	814.1	27.4	-1	16.6	940.6	670.4	353.7	11.2	
6500.0	804.9	26.3	-8	16.8	933.9	675.0	344.7	10.6	
7000.0	791.0	25.1	-1.5	17.1	921.4	673.7	335.5	1	1.000229
7500.0	777.3	24.0	-2.3	17.4	909.1	672.4	322.9	11.4	1.000225
8000.0	763.8	22.8	-3.0	17.7	890.9	671.0	314.5	13.2	1.000221
8500.0	750.6	21.6	-3.7	17.9	884.9	669.7	310.9	13.7	1.000217
9000.0	737.6	20.5	-4.5	18.2	873.1	668.5	307.4	14.3	1.000214
9500.0	724.8	19.3	-5.2	18.5	861.5	667.0	306.1	14.3	1.000210
10000.0	712.2	18.1	-6.0	18.7	850.0	665.6	304.8	14.4	1.000207
10500.0	699.9	17.0	-6.8	19.0	838.7	664.2	303.1	14.9	1.000203
11000.0	687.3	15.5	-7.0	20.5	827.8	662.6	301.6	15.4	1.000201
11500.0	674.9	14.0	-7.3	22.0	817.0	660.9	293.0	16.5	1.000198
12000.0	662.7	12.6	-7.7	23.4	806.5	659.1	285.2	17.9	1.000196
12500.0	650.8	11.1	-8.2	24.9	796.1	657.4	276.1	19.2	1.000193
13000.0	639.1	9.6	-8.7	26.4	785.9	655.7	268.2	20.8	1.000190
13500.0	627.5	8.1	-9.3	27.9	775.8	654.0	264.1	16.7	1.000187
14000.0	616.2	6.7	-9.7	30.0	765.7	652.3			1.000185
14500.0	604.8	5.3	-9.2	34.2	755.3	650.7			1.000183
15000.0	593.7	3.9	-9.0	38.5	745.1	649.0			1.000181

STATION ALTITUDE 4051.57 FEET MSL
8 JUNE 81 1030 HRS MDT
ASCENSION NO. 116

MANOMETRIC LEVELS
1590180116

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON UFG

TABLE 17

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE			REL. HUM. PERCENT	WIND DATA	WIND SPEED KNOTS
		AIR DEGREES	DEWPONT CENTIGRADE	DIRECTION DEGREES (TN)			
850.0	4937.	29.9	1.4	16.	1.1	107	
800.0	6696.	25.9	-1.1	17.	340.4	10.5	
750.0	8541.	21.6	-3.8	18.	310.6	13.8	
700.0	10485.	17.0	-6.8	19.	303.2	14.9	
650.0	12534.	11.0	-8.2	25.	275.4	19.3	
600.0	14698.	4.7	-9.1	36.			

POSITION ALTITUDE 3909.00 FEET M.L.
R JUNE 61 1133 hrs D T
ASCENSION NO. 378

SIGNIFICANT LEVEL DATA
1590020376
WHITE SANDS

UTM COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 18

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE IN FEET	TEMPERATURE AIR DEPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
878.1	3989.0	36.0	14.0
872.4	4182.7	33.8	16.0
850.0	4650.7	31.4	18.0
783.4	7321.2	24.3	20.0
700.0	10506.5	16.0	23.0
588.4	15244.9	3.4	35.0
545.4	17251.1	-1.3	19.0
500.0	19511.0	-5.4	17.0
400.0	25134.5	-18.0	18.0
300.0	31289.1	-34.1	18.0

INITIAL ALTITUDE 3989.00 FEET MSL
A JUNE 01 1133 HRS MDT
ASCENSION NO. 378

UPPER AIR DATA
149002375
WHITE SANDS
TABLE 19

GEOMETRIC ALTITUDE
MILLIBARS
MSL FEET

3989.0
4000.0
4500.0
5000.0
5500.0
6000.0
6500.0
7000.0
7500.0
8000.0
8500.0
9000.0
9500.0
10000.0
10500.0
11000.0
11500.0
12000.0
12500.0
13000.0
13500.0
14000.0
14500.0
15000.0
15500.0
16000.0
16500.0
17000.0
17500.0
18000.0
18500.0
19000.0
19500.0
20000.0
20500.0
21000.0
21500.0
22000.0
22500.0
23000.0

GEOMETRIC ALTITUDE MILLIBARS MSL FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES	AIR DEGREES	DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CURIC METER	SPEED KNOTS	DIRECTION DEGREES(TIN)	WIND DATA KNOTS	INDEX OF REFRACTION
3989.0	875.1	36.0	4.3	14.0	985.9	660.2	20.0	7.0	1.000253	
4000.0	877.8	35.9	4.5	14.2	995.9	680.1	19.8	7.0	1.000253	
4500.0	865.1	32.8	5.4	18.0	978.6	682.0	11.6	5.9	1.000254	
5000.0	848.6	31.3	4.2	18.0	967.6	681.0	0.2	5.1	1.000249	
5500.0	834.1	29.8	3.3	18.5	955.9	679.2	344.4	4.5	1.000245	
6000.0	819.8	28.3	2.4	18.9	944.4	677.5	326.7	4.2	1.000241	
6500.0	805.9	26.8	1.5	19.3	933.1	675.7	321.9	5.0	1.000237	
7000.0	792.1	25.3	5.5	19.7	921.9	674.0	320.4	7.2	1.000232	
7500.0	776.5	23.8	-5.3	20.2	910.5	672.8	320.5	11.5	1.000228	
8000.0	764.8	22.5	-1.1	20.6	898.6	670.8	312.6	13.3	1.000225	
8500.0	751.4	21.2	-1.9	21.1	886.9	669.3	301.7	15.7	1.000221	
9000.0	738.3	19.9	-2.7	21.6	875.3	667.8	294.3	18.2	1.000217	
9500.0	725.3	18.6	-3.5	22.1	863.9	666.3	290.5	19.5	1.000214	
10000.0	712.6	17.3	-4.3	22.5	852.7	664.8	286.2	19.9	1.000210	
10500.0	700.2	16.0	-5.1	23.0	841.6	663.2	280.8	20.1	1.000206	
11000.0	687.5	14.7	-5.5	24.2	830.2	661.7	274.0	19.2	1.000204	
11500.0	675.0	13.4	-6.0	25.5	818.9	660.1	267.6	18.4	1.000201	
12000.0	662.7	12.0	-6.5	26.8	807.8	658.6	261.4	17.7	1.000198	
12500.0	650.7	10.7	-7.0	28.0	796.9	657.0	254.5	16.7	1.000195	
13000.0	638.9	9.4	-7.6	29.3	786.2	655.5	246.8	15.9	1.000192	
13500.0	627.3	8.0	-8.2	30.6	775.6	653.9	237.5	13.7	1.000189	
14000.0	615.9	6.7	-8.9	31.8	765.2	652.4	224.6	11.7	1.000186	
14500.0	604.7	5.4	-9.5	33.0	754.9	650.8	206.4	10.3	1.000183	
15000.0	593.7	4.1	-10.2	34.4	744.8	649.2	196.7	11.0	1.000180	
15500.0	582.7	2.8	-11.9	33.0	734.5	647.7	195.3	12.2	1.000176	
16000.0	571.8	1.6	-14.5	29.0	724.0	646.2	193.0	12.9	1.000171	
16500.0	561.1	0.5	-17.2	25.0	713.7	644.7	194.7	13.6	1.000167	
17000.0	550.6	-7	-20.3	21.0	703.5	643.3	197.1	14.2	1.000163	
17500.0	540.2	-1.8	-22.4	18.8	692.9	642.0	200.8	14.5	1.000160	
18000.0	529.9	-2.7	-23.4	18.3	682.0	640.9	206.5	14.5	1.000157	
18500.0	519.8	-3.6	-24.5	17.9	671.3	639.8	211.7	13.1	1.000154	
19000.0	509.9	-4.5	-25.5	17.5	660.8	638.8	210.6	10.2	1.000151	
19500.0	500.2	-5.4	-26.5	17.0	650.4	637.7	222.9	8.0	1.000149	
20000.0	490.4	-6.5	-27.4	17.1	640.3	636.3	221.2	6.4	1.000146	
20500.0	480.8	-7.6	-28.3	17.2	630.4	635.0	210.6	6.6	1.000144	
21000.0	471.3	-8.7	-29.1	17.3	620.7	633.6	200.0	7.5	1.000141	
21500.0	462.1	-9.9	-30.0	17.4	611.1	632.5	198.9	6.8	1.000139	
22000.0	452.0	-11.0	-30.9	17.4	601.7	630.9	193.7	6.3	1.000137	
22500.0	444.1	-12.1	-31.8	17.5	592.4	629.6	203.9	6.0	1.000134	
23000.0	435.4	-13.2	-32.6	17.6	583.3	628.2	205.5	6.2	1.000132	

STATION ALTITUDE 3989.00 FEET MSL
8 JUNE 81 1733 HRS. IDT
ASCENSION NO. 378

UPPER AIR DATA
1590020378
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 19 CON'T

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEPOINT CENTIGRADE	REL.HUM. PERCENT	SPEED OF SOUND METER	WIND DATA DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
23500.0	420.8	-14.3	-33.5	17.7	574.3	626.0	204.4	6.3
24000.0	410.4	-15.5	-34.4	17.8	565.5	625.5	191.2	5.5
24500.0	410.2	-16.6	-35.3	17.9	556.8	624.1	177.5	4.8
25000.0	402.1	-17.7	-36.2	18.0	548.3	622.7	163.8	4.3
25500.0	395.9	-18.9	-37.2	18.0	539.5	621.3	160.9	4.1
26000.0	382.7	-20.0	-38.1	18.0	530.8	619.9	165.2	3.8
26500.0	377.7	-21.2	-39.1	18.0	522.2	618.4	155.6	3.6
27000.0	369.9	-22.4	-40.1	18.0	513.7	617.0	142.5	3.6
27500.0	362.2	-23.6	-41.1	18.0	505.4	615.5	121.0	4.1
28000.0	354.7	-24.7	-42.1	18.0	497.3	614.1	105.6	4.9
28500.0	347.3	-25.9	-43.1	18.0	489.3	612.6	95.7	6.0
29000.0	340.1	-27.1	-44.1	18.0	481.4	611.2	93.3	6.7
29500.0	332.0	-28.3	-45.1	18.0	473.7	609.7	95.1	6.9
30000.0	324.1	-29.4	-46.1	18.0	466.1	608.2	94.7	6.9
30500.0	316.3	-30.6	-47.1	18.0	458.6	606.8		1.000104
31000.0	312.7	-31.8	-48.1	18.0	451.3	605.3		1.000103
31500.0	306.2	-33.0	-49.0	18.0	444.1	603.8		1.000101
								1.000099

STATION ALTITUDE 3989.00 FEET MSL
 A JUNE 81 133 HRS ADT
 ASCENSION NO. 378

MANDATORY LEVELS
 1590020378
 WHITE SANDS

TABLE 20

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES	AIR DEWPONT CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
					DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	4947.	31.4	4.2	18.	100	5.1
800.0	6712.	26.1	1.1	19.	320.8	5.5
750.0	8557.	21.1	-2.0	21.	300.4	16.0
700.0	10496.	16.0	-5.1	25.	280.3	20.1
650.0	12541.	10.6	-7.0	28.	255.8	16.6
600.0	14705.	4.8	-9.8	34.	199.5	10.3
550.0	17009.	-.8	-20.4	21.	197.2	14.2
500.0	19483.	-5.4	-26.5	17.	222.9	6.0
450.0	22165.	-11.3	-31.2	17.	201.3	6.2
400.0	25092.	-18.0	-36.4	18.	160.1	4.3
350.0	28319.	-25.5	-42.7	18.	98.1	5.7
300.0	31924.	-34.1	-50.0	16.		